

Sequence Listing PCT JP0302946.txt  
SEQUENCE LISTING

<110> GOTO, Hidetsugu  
NAKANO, Shigeru

<120> Structural gene responsible for acetic acid resistance in acetic acid bacteria, acetic acid bacteria transformed with said gene, and acetic acid fermentation using said transformations

<130> 4439-4024

<140> tba

<141> 2004-09-10

<150> PCT/JP03/02946

<151> 2003-03-12

<160> 10

<170> PatentIn version 3.2

<210> 1

<211> 2016

<212> DNA

<213> Gluconacetobacter entanii

<400> 1

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35 40 45

Phe Gly Thr Asn Asn Tyr Leu Gly Leu Ser Gln Ser Pro Ala Ala Ile  
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Glu Ala Ala Val Glu Ala Ala Arg Ala Tyr Gly Val Gly Thr Thr Gly  
65 70 75 80

Ser Arg Ile Ala Asn Gly Thr Gln Gly Leu His Arg Gln Leu Glu Glu  
85 90 95

Arg Leu Cys Thr Phe Phe Arg Arg Arg His Cys Met Val Phe Ser Thr  
100 105 110

Gly Tyr Gln Ala Asn Leu Gly Thr Ile Ser Ala Leu Ala Gly Lys Asp  
115 120 125

Asp Tyr Leu Leu Leu Asp Ala Asp Ser His Ala Ser Ile Tyr Asp Gly

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135 140

130

Ser Arg Leu Gly His Ala Gln Val Ile Arg Phe Arg His Asn Asp Ala  
145 150 155 160

Asp Asp Leu His Lys Arg Leu Arg Arg Leu Asp Gly Thr Pro Gly Ala  
165 170 175

Lys Leu Val Val Val Glu Gly Ile Tyr Ser Met Met Gly Asp Val Val  
180 185 190

Pro Met Ala Glu Phe Ala Ala Val Lys Arg Glu Thr Gly Ala Trp Leu  
195 200 205

Leu Ala Asp Glu Ala His Ser Val Gly Val Met Gly Glu His Gly Arg  
210 215 220

Gly Val Ala Glu Ser Asp Gly Val Glu Asp Asp Val Asp Phe Val Val  
225 230 235 240

Gly Thr Phe Ser Lys Ser Leu Gly Thr Val Gly Gly Tyr Cys Val Ser  
245 250 255

Asn His Ala Gly Leu Asp Leu Ile Arg Leu Cys Ser Arg Pro Tyr Met  
260 265 270

Phe Thr Ala Ser Leu Pro Pro Glu Val Ile Ala Ala Thr Met Ala Ala  
275 280 285

Leu Thr Glu Leu Glu Asn Arg Pro Glu Leu Arg Val Arg Leu Met Asp  
290 295 300

Asn Ala Arg Arg Leu His Asp Gly Leu Gln Ala Ala Gly Leu Arg Thr  
305 310 315 320

Gly Pro Gln Ala Ser Pro Val Val Ser Val Ile Leu Asp Asp Val Ala  
325 330 335

Val Ala Val Ala Phe Trp Asn Arg Leu Leu Asp Leu Gly Val Tyr Val  
340 345 350

Asn Leu Ser Leu Pro Pro Ala Thr Pro Asp Gln His Pro Leu Leu Arg  
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Sequence Listing PCT JP0302946.txt

<211> 1360

<212> DNA

<213> Acetobacter aceti

<400> 3

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20 25 30

Lys Pro Val Ser Ser Thr Val Gly Ile Ile Glu Gly Arg Glu Thr Leu

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Leu Phe Gly Thr Asn Asn Tyr Leu Gly Leu Ser Gln Ser Lys Asn Ala  
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Ile Gln Ala Ala Gln Gln Ala Ala Ala Ala Cys Gly Val Gly Thr Thr  
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Gly Ser Arg Ile Ala Asn Gly Thr Gln Ser Leu His Arg Gln Leu Glu  
 85 90 95

Lys Asp Ile Ala Ala Phe Phe Gly Arg Arg Asp Ala Met Val Phe Ser  
 100 105 110

Thr Gly Tyr Gln Ala Asn Leu Gly Ile Ile Ser Thr Leu Ala Gly Lys  
 115 120 125

Asp Asp His Leu Phe Leu Asp Ala Asp Ser His Ala Ser Ile Tyr Asp  
 130 135 140

Gly Ser Arg Leu Ser Ala Ala Glu Val Ile Arg Phe Arg His Asn Asp  
 145 150 155 160

Pro Asp Asn Leu Tyr Lys Arg Leu Lys Arg Met Asp Gly Thr Pro Gly  
 165 170 175

Ala Lys Leu Ile Val Val Glu Gly Ile Tyr Ser Met Thr Gly Asn Val  
 180 185 190

Ala Pro Ile Ala Glu Phe Val Ala Val Lys Lys Glu Thr Gly Ala Tyr  
 195 200 205

Leu Leu Val Asp Glu Ala His Ser Phe Gly Val Leu Gly Gln Asn Gly  
 210 215 220

Arg Gly Ala Ala Glu Ala Asp Gly Val Glu Ala Asp Val Asp Phe Val  
 225 230 235 240

Val Gly Thr Phe Ser Lys Ser Leu Gly Thr Val Gly Gly Tyr Cys Val  
 245 250 255

Ser Asp His Pro Glu Leu Glu Phe Val Arg Leu Asn Cys Arg Pro Tyr  
 260 265 270

Met Phe Thr Ala Ser Leu Pro Pro Glu Val Ile Ala Ala Thr Thr Ala  
 275 280 285

Ala Leu Lys Asp Met Gln Ala His Pro Glu Leu Arg Lys Gln Leu Met  
 290 295 300

Ala Asn Ala Gln Gln Leu His Ala Gly Phe Val Asp Ile Gly Leu Asn  
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305 310 315 320

Ala Ser Lys His Ala Thr Pro Val Ile Ala Val Thr Leu Glu Thr Ala  
325 330 335

Glu Glu Ala Ile Pro Met Trp Asn Arg Leu Leu Glu Leu Gly Val Tyr  
340 345 350

Val Asn Leu Ser Leu Pro Pro Ala Thr Pro Asp Ser Arg Pro Leu Leu  
355 360 365

Arg Cys Ser Val Met Ala Thr His Thr Pro Glu Gln Ile Ala Gln Ala  
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Ile Ala Ile Phe Arg Gln Ala Ala Ala Glu Val Gly Val Thr Ile Thr  
385 390 395 400

Pro Ser Ala Ala

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